1.0 INTRODUCTION

Tetra Tech EM Inc. (Tetra Tech), under Contract No. 006244 with the Utah Department of Environmental Quality (UDEQ) Division of Solid and Hazardous Waste (DSHW), was issued Work Order 002 to perform a Phase I, or screening level, ecological risk assessment (ERA) of air emissions from the treatment of munitions at the Tooele Chemical Agent Disposal Facility (TOCDF) and Chemical Agent Munitions Disposal System (CAMDS), which are located at the Deseret Chemical Depot (DCD) in Tooele County, Utah. The Phase I ERA is an update of the ERA in the *Screening Risk Assessment* (A.T. Kearney 1996) and was performed to support the Part B Hazardous Waste Permit for TOCDF.

The stockpiled munitions include organophosphate nerve agents and sulfur mustard blister agents. The nerve agents include isopropyl methylphosphonofluoridate (GB) and O-ethyl-S-[2-diiospropylaminoethyl] methylphosphonothiolate (VX). Sulfur mustard blister agent is composed of a mixture of three chemical agents: (1) bis(2-chloroethyl) sulfide (H), (2) HD (distilled H), and (3) HT (a mixture of HD and bis-2-[chloroethylthioethyl]ether [T]).

Under task 04 of the work order, Tetra Tech was authorized to prepare a report describing the results of the Phase I ERA. This report, which is a companion to the TOCDF human health risk assessment (HHRA) report (Tetra Tech 2002a), provides results that follow the procedures presented in the draft final Phase I ERA protocol (Tetra Tech 2002b).

The objective of the Phase I ERA was to determine, for each emissions source at TOCDF and CAMDS, cumulative (across agent campaigns) hazards for chemicals of potential concern (COPC) based on ecological screening quotients (ESQ) for ecological receptors (communities and guilds) in the assessment area. The ESQs are based on weighted-average emission rates for the TOCDF incinerators and worst-case emission rates for the CAMDS incinerators. The rationale for using these emission rates is discussed in detail in the HHRA report (Tetra Tech 2002a). Other emission sources at the facilities were evaluated using source-specific emission rates.

EcoRisk View version 2.6 (Lakes Environmental Software 2001) was used to perform the risk computations. EcoRisk View output was imported into a Microsoft Access database to identify ESQs exceeding the DSHW target level.

The remaining report is divided into four main sections and five appendices, as follows:

- Section 2–Background and Supporting Information
- Section 3–Exposure Assessment
- Section 4–Risk Characterization
- Section 5–DSHW Strategy for Target Level Exceedances
- Appendix A–Photographs of Water Bodies
- Appendix B–Emission Rate Spreadsheets
- Appendix C–Polychlorinated Biphenyl Emission Rates
- Appendix D–Microsoft Access Database (electronic version)
- Appendix E–EcoRisk View Output Files (electronic version)
- Appendix F–Ecological Screening Quotients Exceeding DSHW Target Level